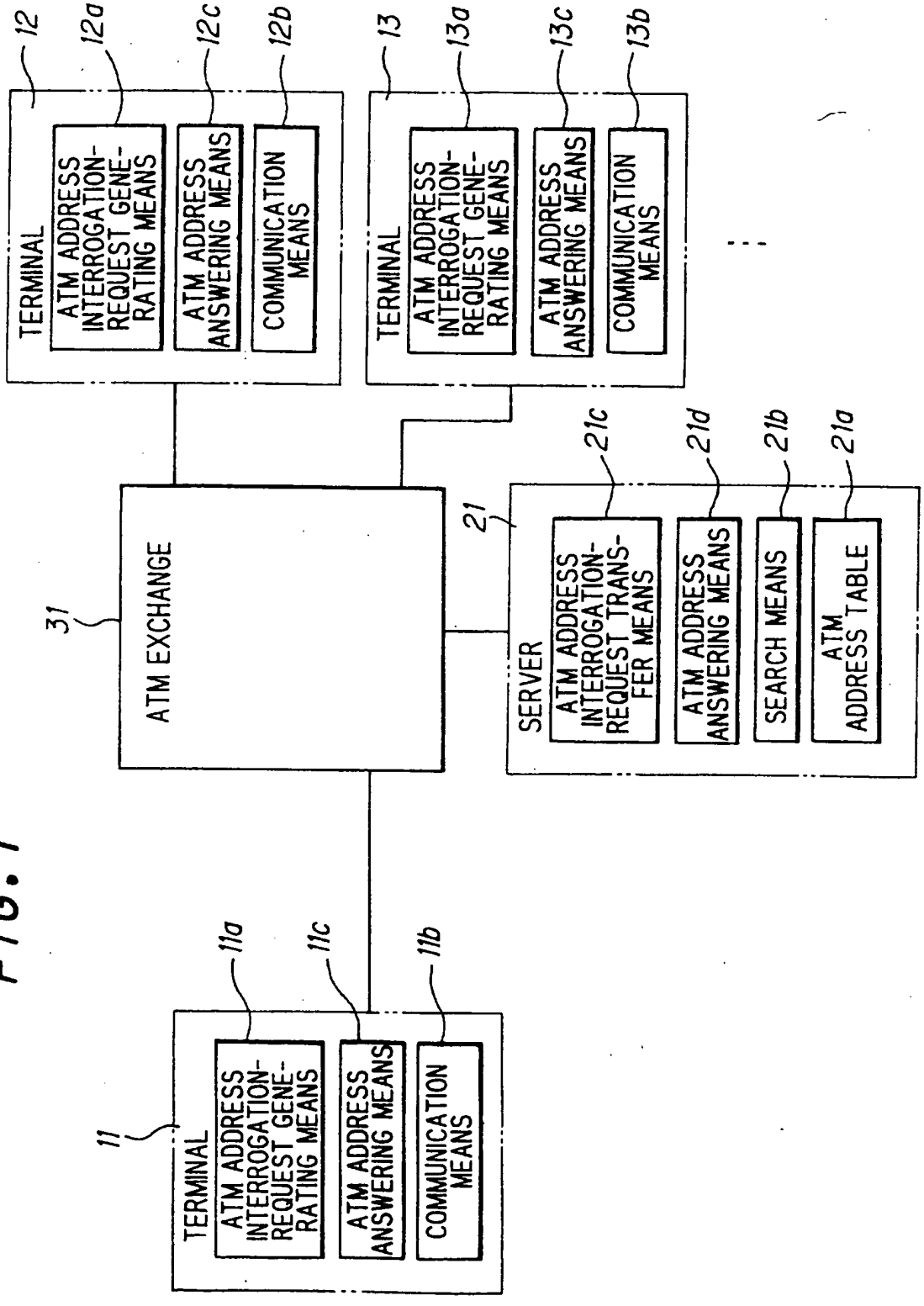


FIG. 1

6320T-5t6/2t50

6530F 5746246

FIG. 2

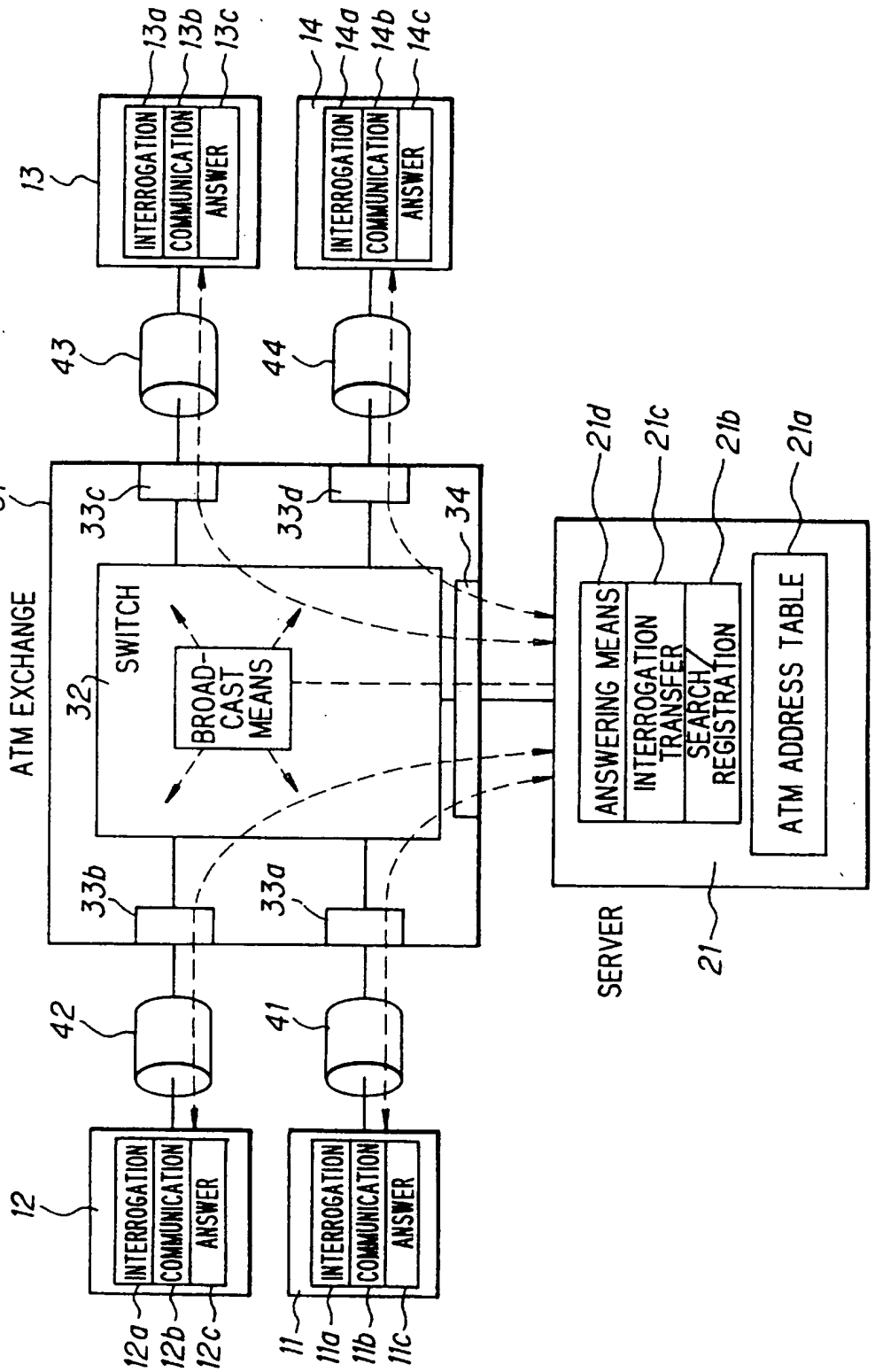


FIG. 3

PROTOCOL ADDRESS	ATM ADDRESS	REFERENCE TIME
B	b	12:16
A	a	09:11
C	c	16:22
D	d	08:20
⋮	⋮	⋮

FIG. 4A

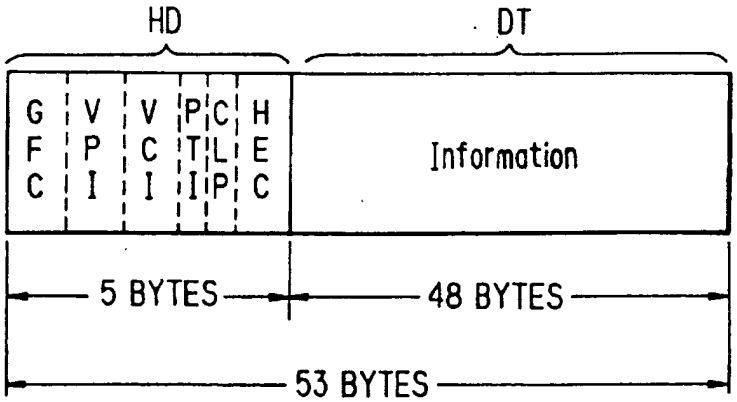


FIG. 4B

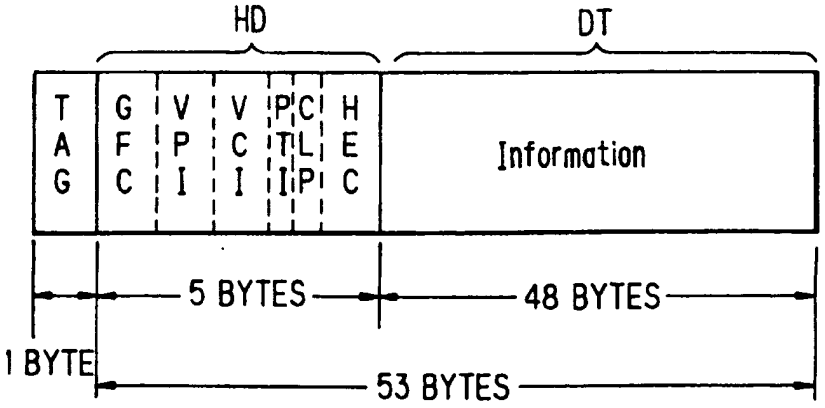


FIG. 5

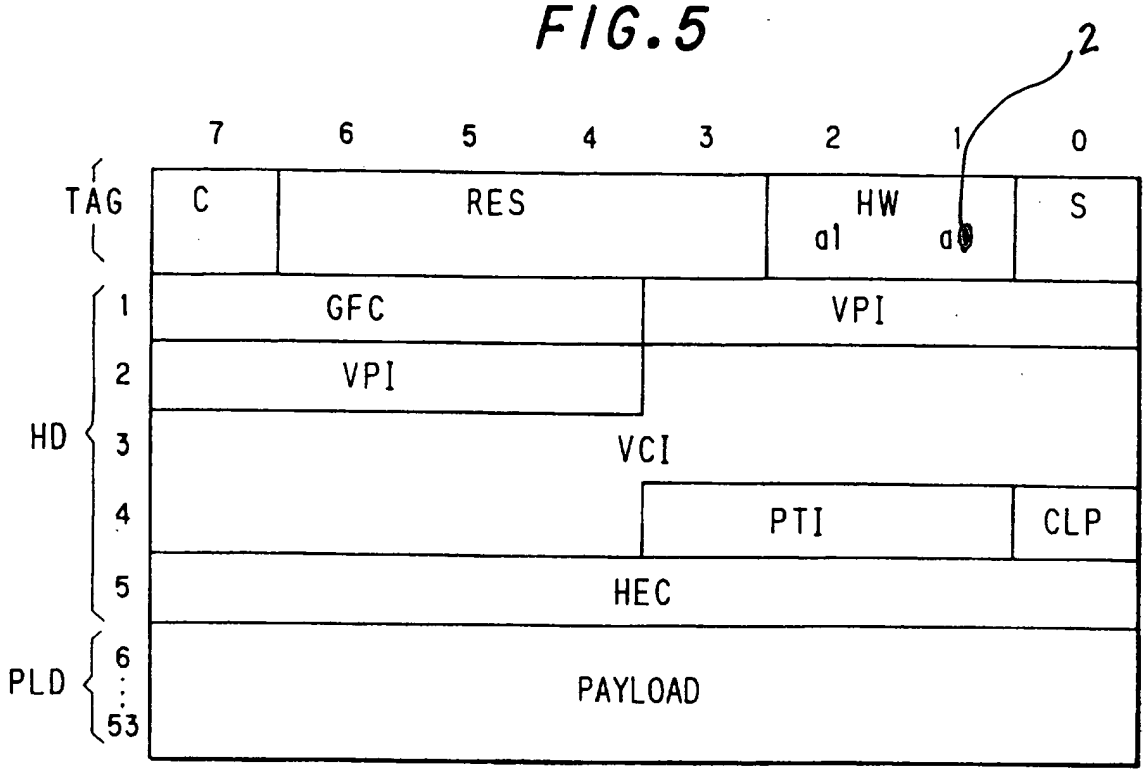
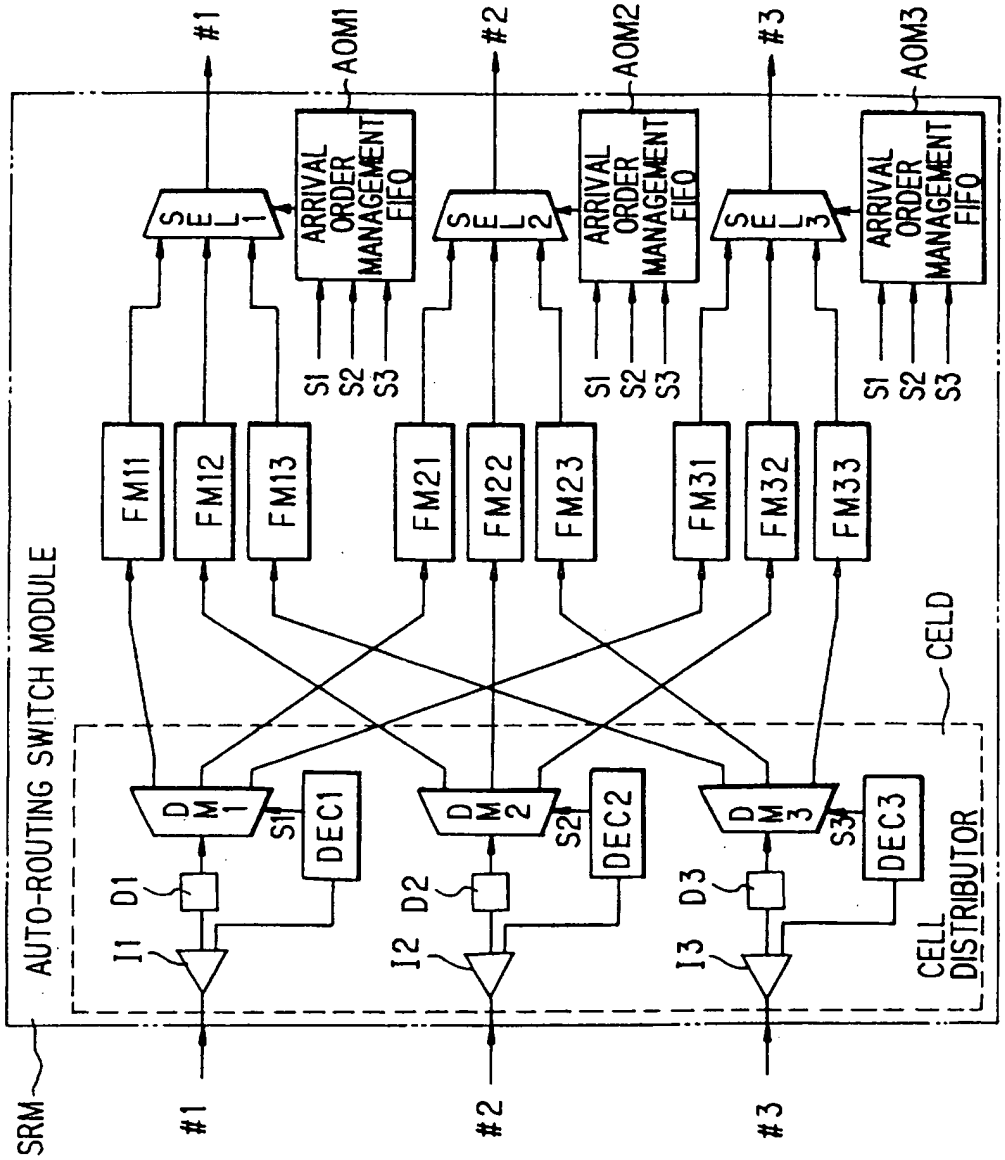


FIG. 6

TAG INFORMATION				SELECTED OUTPUT				
C	a1	a0	S	OUT-PUT 1	OUT-PUT 2	OUT-PUT 3	OUT-PUT 4	OUT-PUT S
0	0	0	0	●	—	—	—	—
0	0	1	0	—	●	—	—	—
0	1	0	0	—	—	●	—	—
0	1	1	0	—	—	—	●	—
0	x	x	1	—	—	—	—	●
1	x	x	0	●	●	●	●	—

FIG. 7


#1
AOM1
#2
AOM2
#3
AOM3
SEL1
SEL2
SEL3
ARRIVAL ORDER MANAGEMENT FIFO
S1
S2
S3
FM11
FM12
FM13
FM21
FM22
FM23
FM31
FM32
FM33
AUTO-ROUTING SWITCH MODULE
CELD
DM1
DM2
DM3
DEC1
DEC2
DEC3
D1
D2
D3
I1
I2
I3
CELL DISTRIBUTOR
SRM
#1
#2
#3

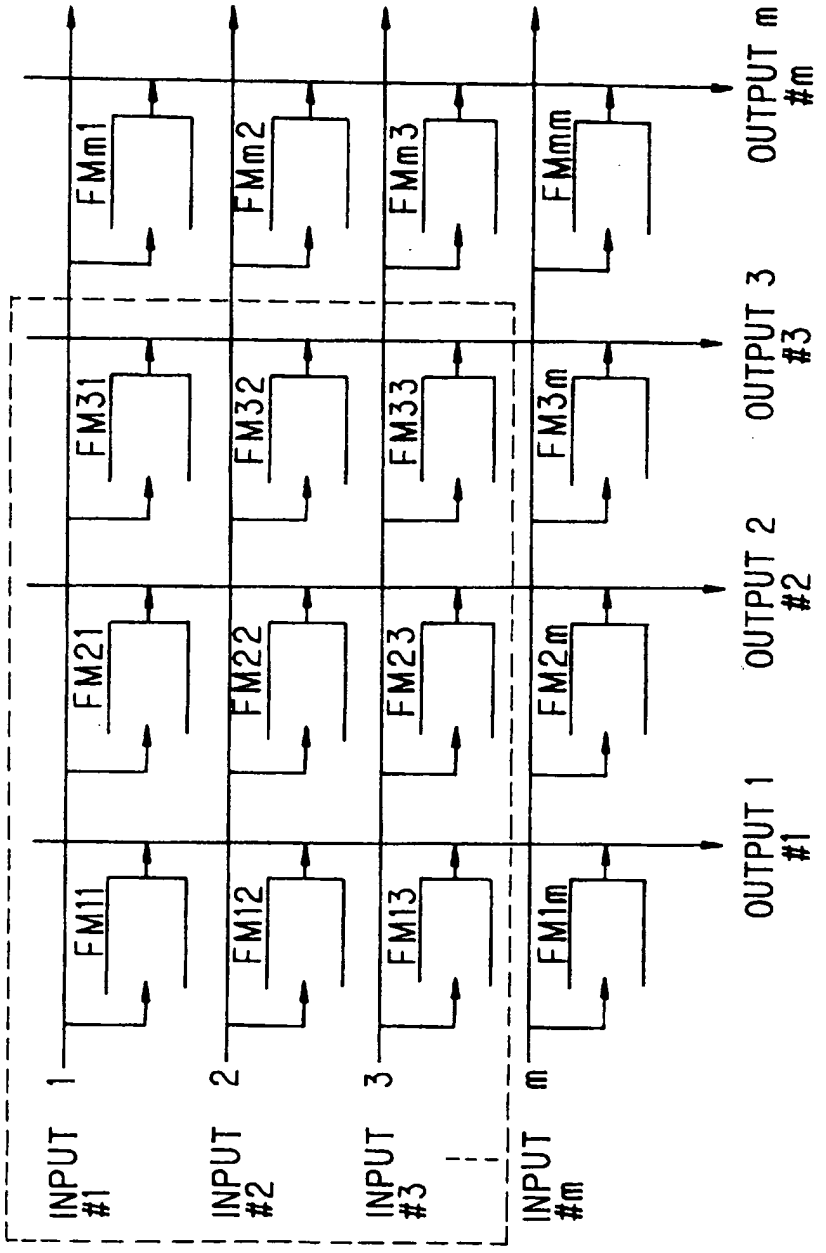
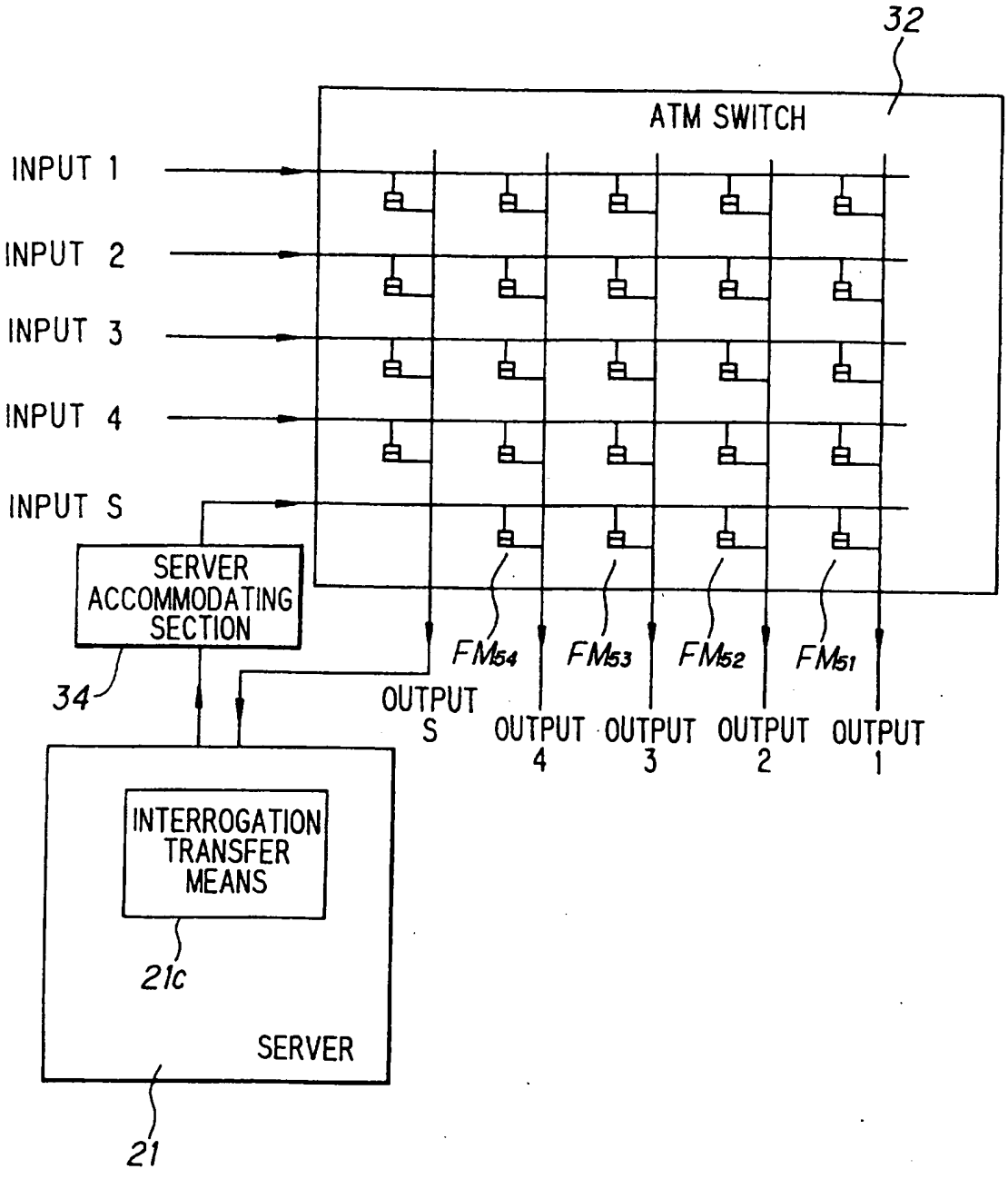

INPUT #1
INPUT #2
INPUT #3
INPUT #m
1
2
3
m
FM11
FM12
FM13
FM1m
FM21
FM22
FM23
FM2m
FM31
FM32
FM33
FM3m
FMm1
FMm2
FMm3
FMmm
OUTPUT 1 #1
OUTPUT 2 #2
OUTPUT 3 #3
OUTPUT m #m

FIG. 8

FIG.9


32
ATM SWITCH
INPUT 1
INPUT 2
INPUT 3
INPUT 4
INPUT S
SERVER ACCOMMODATING SECTION
34
FM54
FM53
FM52
FM51
OUTPUT S
OUTPUT 4
OUTPUT 3
OUTPUT 2
OUTPUT 1
INTERROGATION TRANSFER MEANS
21c
SERVER
21

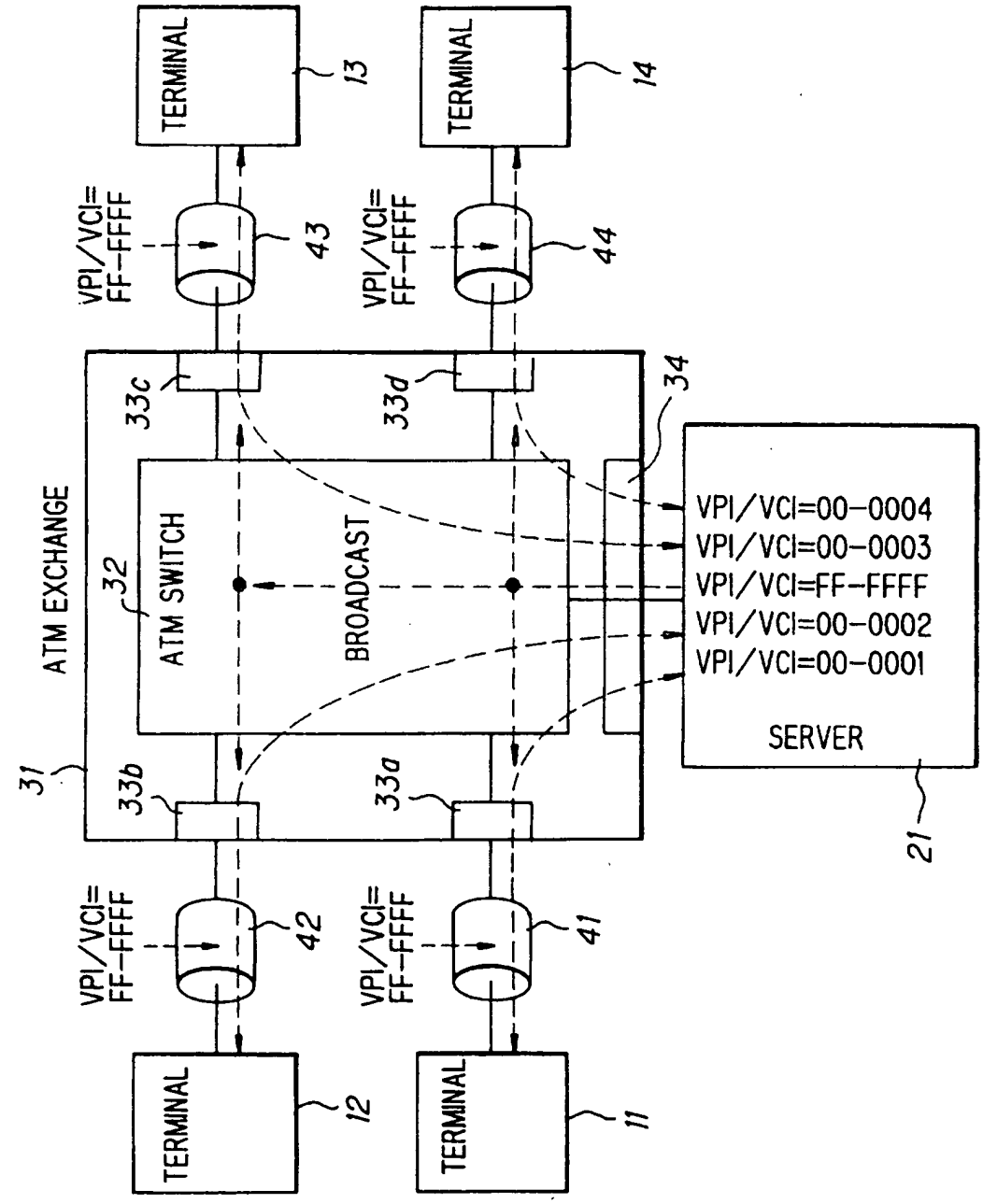

TERMINAL
13
TERMINAL
14
VPI/VCI=
FF-FFFF
43
VPI/VCI=
FF-FFFF
44
33c
33d
34
ATM EXCHANGE
31
ATM SWITCH
32
BROADCAST
VPI/VCI=00-0004
VPI/VCI=00-0003
VPI/VCI=FF-FFFF
VPI/VCI=00-0002
VPI/VCI=00-0001
SERVER
21
33b
33a
VPI/VCI=
FF-FFFF
42
VPI/VCI=
FF-FFFF
41
TERMINAL
12
TERMINAL
11

FIG. 10

FIG. 11

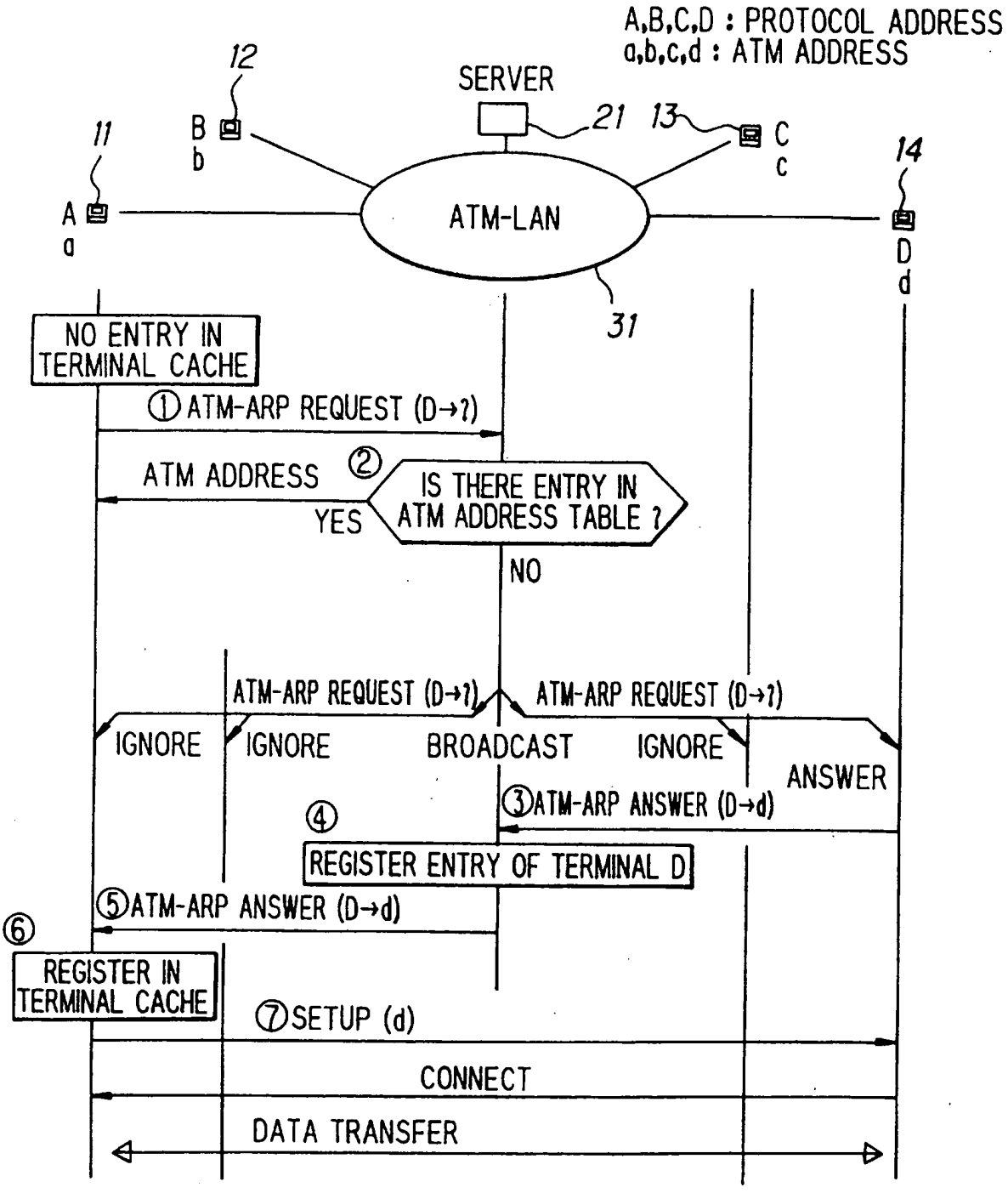
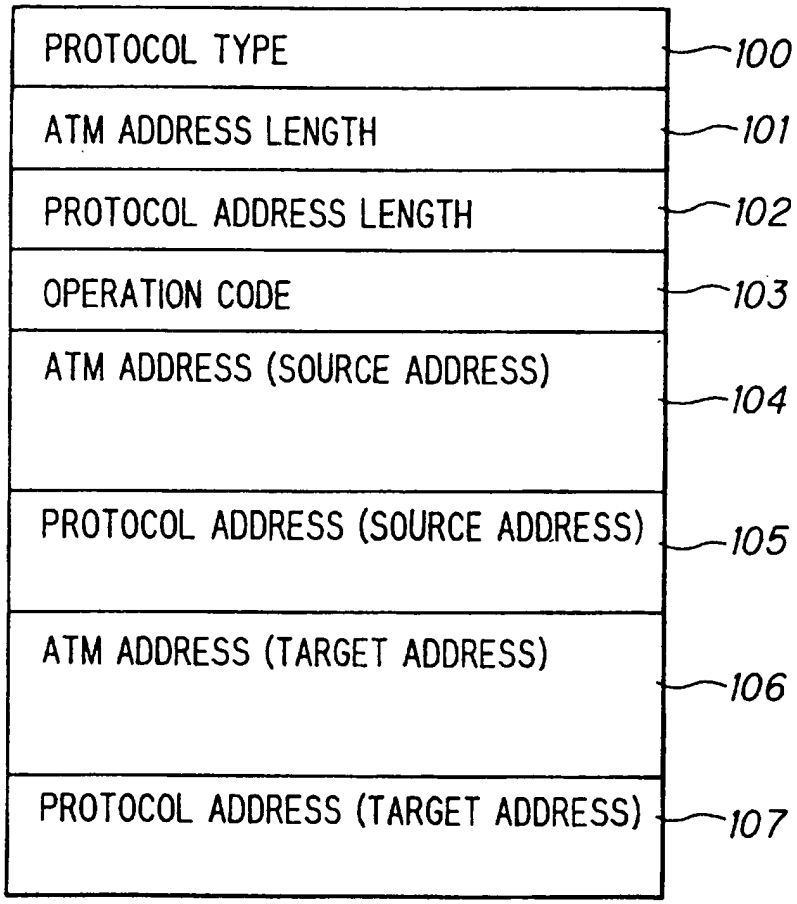

A,B,C,D : PROTOCOL ADDRESS
a,b,c,d : ATM ADDRESS
SERVER
12
21
13
11
14
B
b
C
c
A
a
D
d
ATM-LAN
31
NO ENTRY IN TERMINAL CACHE
① ATM-ARP REQUEST (D→?)
ATM ADDRESS
②
IS THERE ENTRY IN ATM ADDRESS TABLE ?
YES
NO
ATM-ARP REQUEST (D→?)
ATM-ARP REQUEST (D→?)
IGNORE
IGNORE
BROADCAST
IGNORE
ANSWER
③ATM-ARP ANSWER (D→d)
④
REGISTER ENTRY OF TERMINAL D
⑤ATM-ARP ANSWER (D→d)
⑥
REGISTER IN TERMINAL CACHE
⑦SETUP (d)
CONNECT
DATA TRANSFER

FIG. 12



Petitioner Cisco Systems, Inc. - Exhibit 1005

FIG. 13

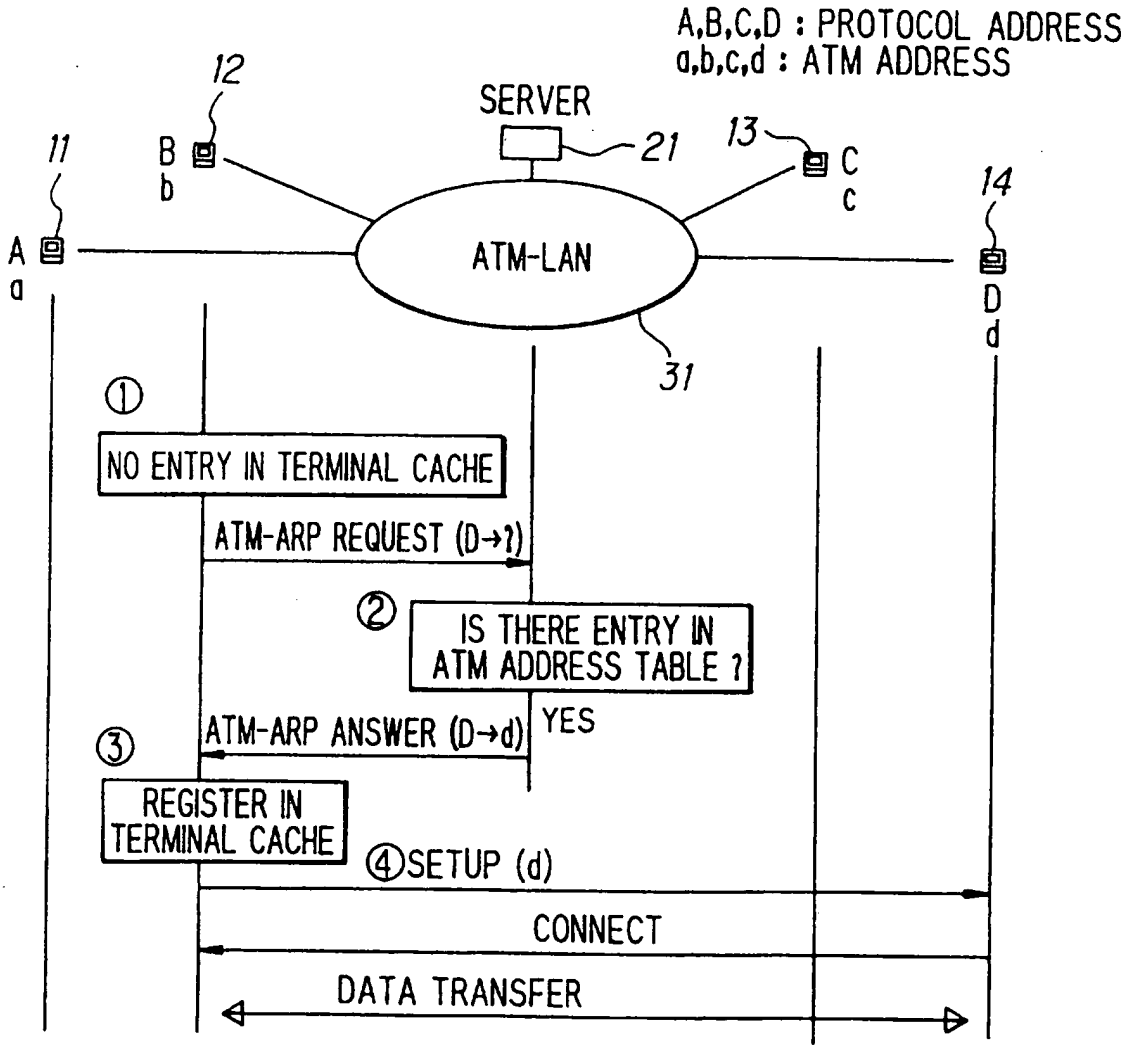

A,B,C,D : PROTOCOL ADDRESS
a,b,c,d : ATM ADDRESS
12
SERVER
21
13
11
B
b
C
c
14
A
a
ATM-LAN
D
d
31
①
NO ENTRY IN TERMINAL CACHE
ATM-ARP REQUEST (D→?)
②
IS THERE ENTRY IN ATM ADDRESS TABLE ?
YES
ATM-ARP ANSWER (D→d)
③
REGISTER IN TERMINAL CACHE
④SETUP (d)
CONNECT
DATA TRANSFER

FIG. 14

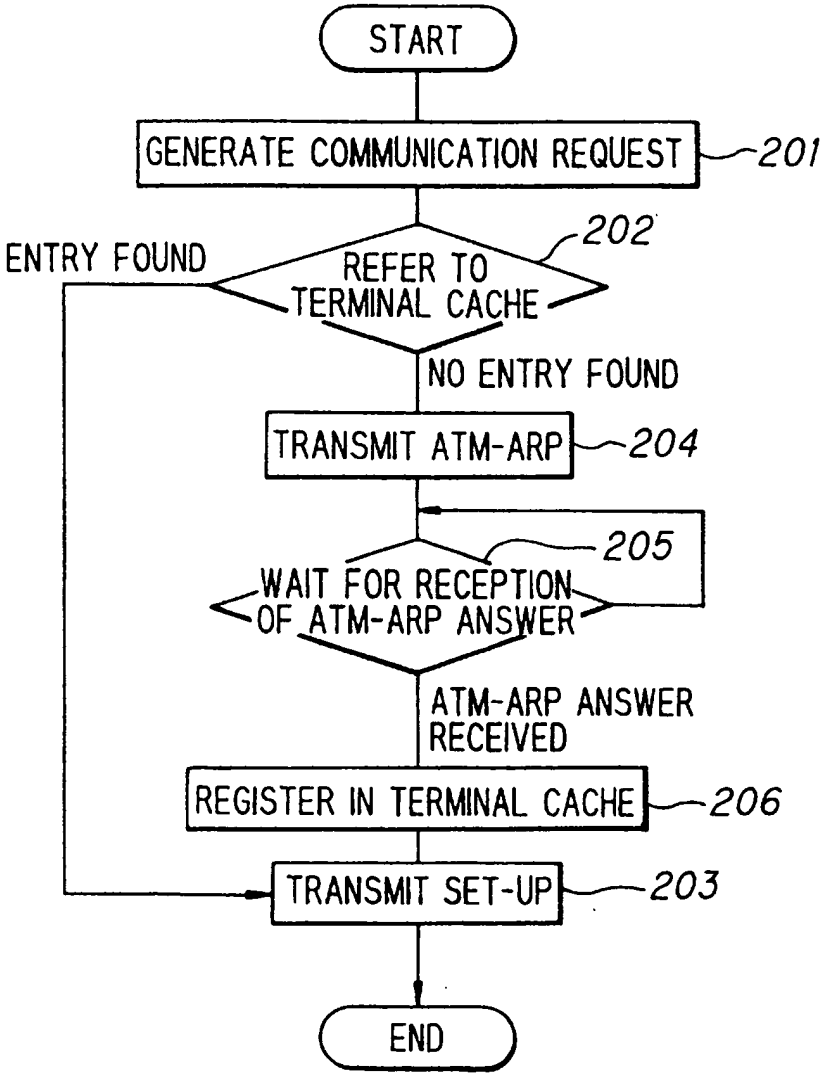
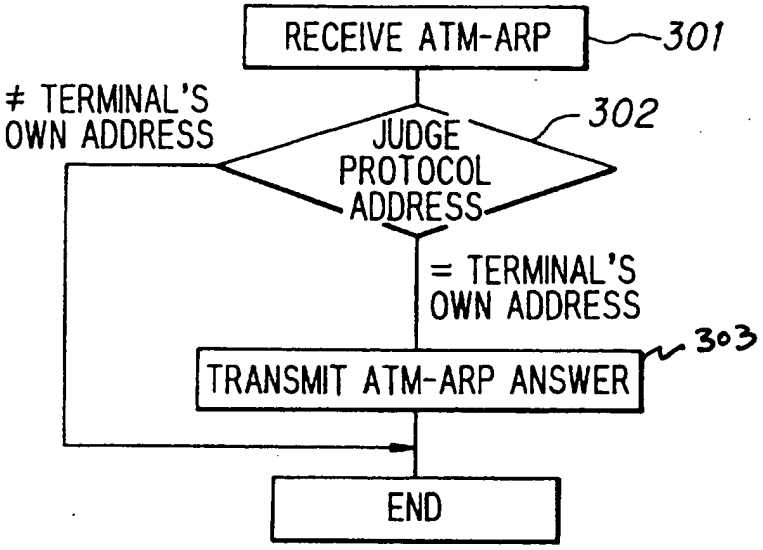

START
GENERATE COMMUNICATION REQUEST
201
202
ENTRY FOUND
REFER TO TERMINAL CACHE
NO ENTRY FOUND
TRANSMIT ATM-ARP
204
205
WAIT FOR RECEPTION OF ATM-ARP ANSWER
ATM-ARP ANSWER RECEIVED
REGISTER IN TERMINAL CACHE
206
TRANSMIT SET-UP
203
END

FIG. 15



Petitioner's Exhibit 1009, Page 0256

FIG. 16

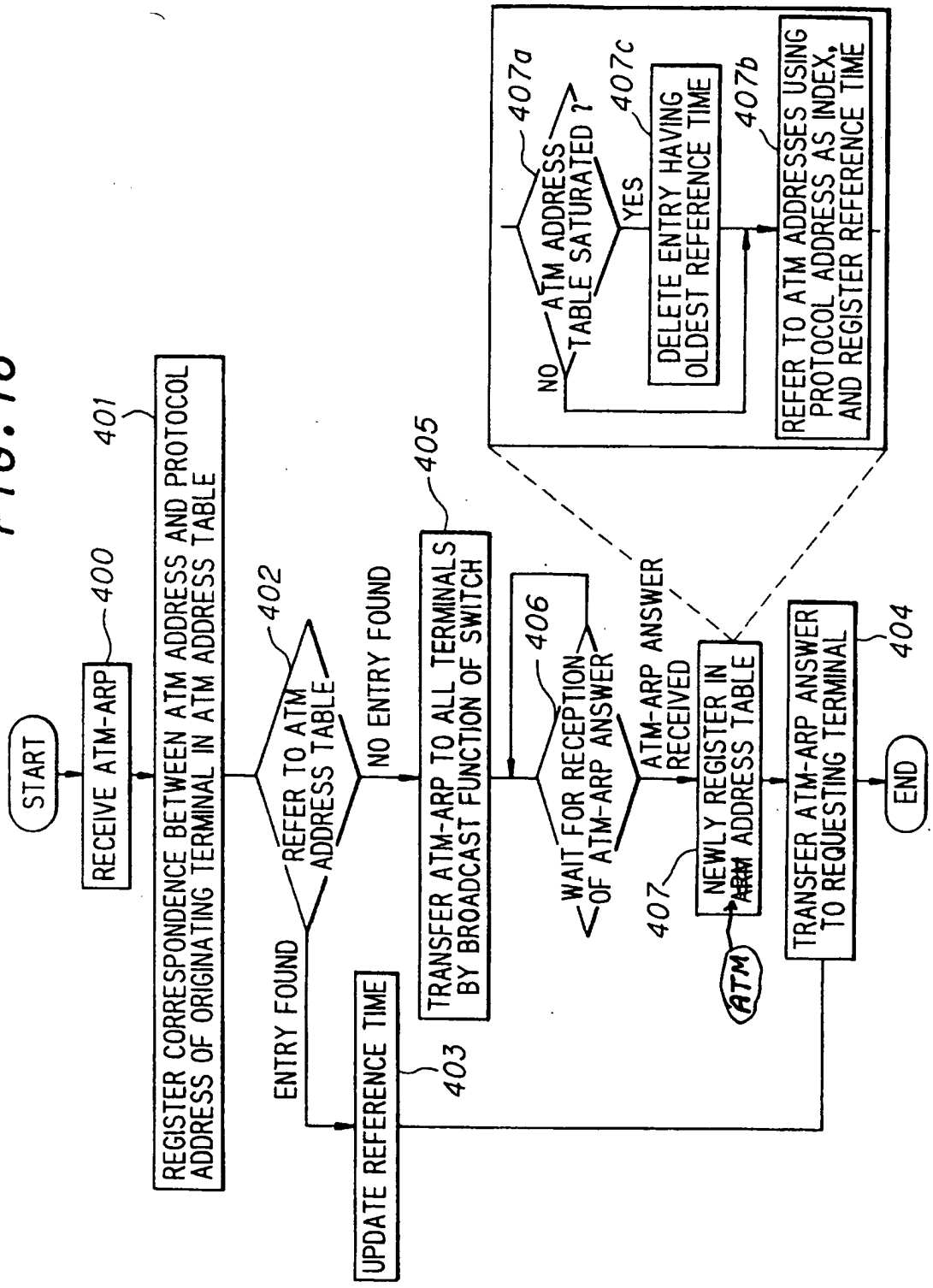

START
RECEIVE ATM-ARP
400
REGISTER CORRESPONDENCE BETWEEN ATM ADDRESS AND PROTOCOL ADDRESS OF ORIGINATING TERMINAL IN ATM ADDRESS TABLE
401
REFER TO ATM ADDRESS TABLE
402
ENTRY FOUND
NO ENTRY FOUND
UPDATE REFERENCE TIME
403
TRANSFER ATM-ARP TO ALL TERMINALS BY BROADCAST FUNCTION OF SWITCH
405
WAIT FOR RECEPTION OF ATM-ARP ANSWER
406
ATM-ARP ANSWER RECEIVED
407
NEWLY REGISTER IN ATM ADDRESS TABLE
ATM
TRANSFER ATM-ARP ANSWER TO REQUESTING TERMINAL
404
END
ATM ADDRESS TABLE SATURATED ?
407a
NO
YES
DELETE ENTRY HAVING OLDEST REFERENCE TIME
407c
REFER TO ATM ADDRESSES USING PROTOCOL ADDRESS AS INDEX, AND REGISTER REFERENCE TIME
407b

FIG. 17

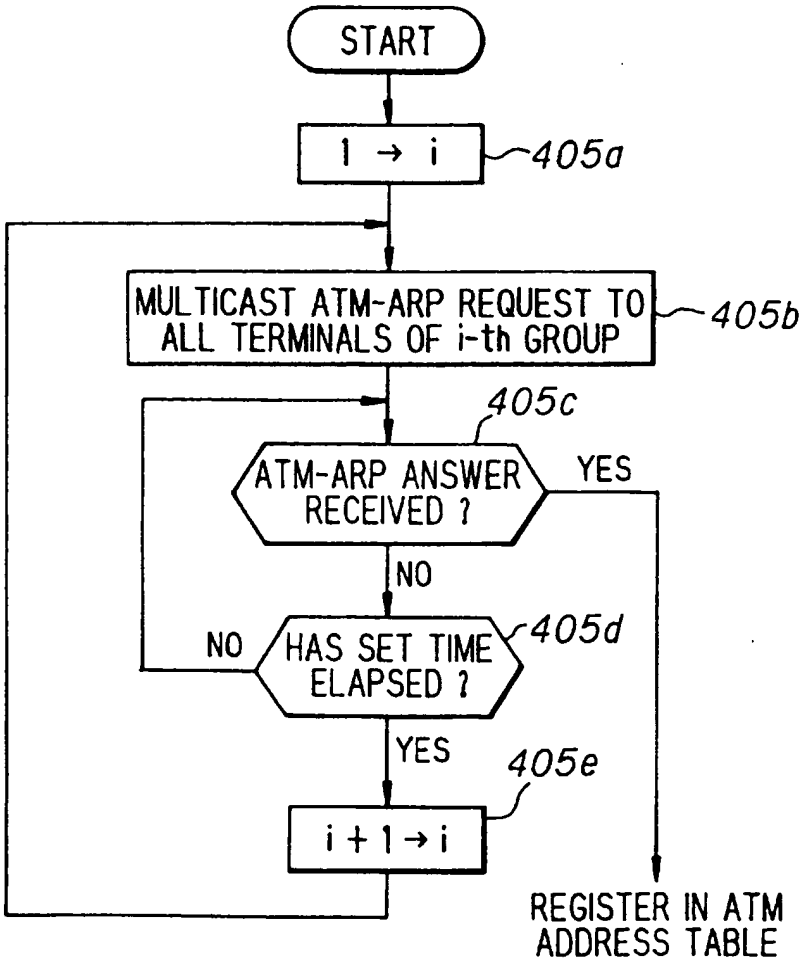

START
1 → i
405a
MULTICAST ATM-ARP REQUEST TO ALL TERMINALS OF i-th GROUP
405b
405c
ATM-ARP ANSWER RECEIVED ?
YES
NO
NO
HAS SET TIME ELAPSED ?
405d
YES
405e
i + 1 → i
REGISTER IN ATM ADDRESS TABLE

FIG. 18

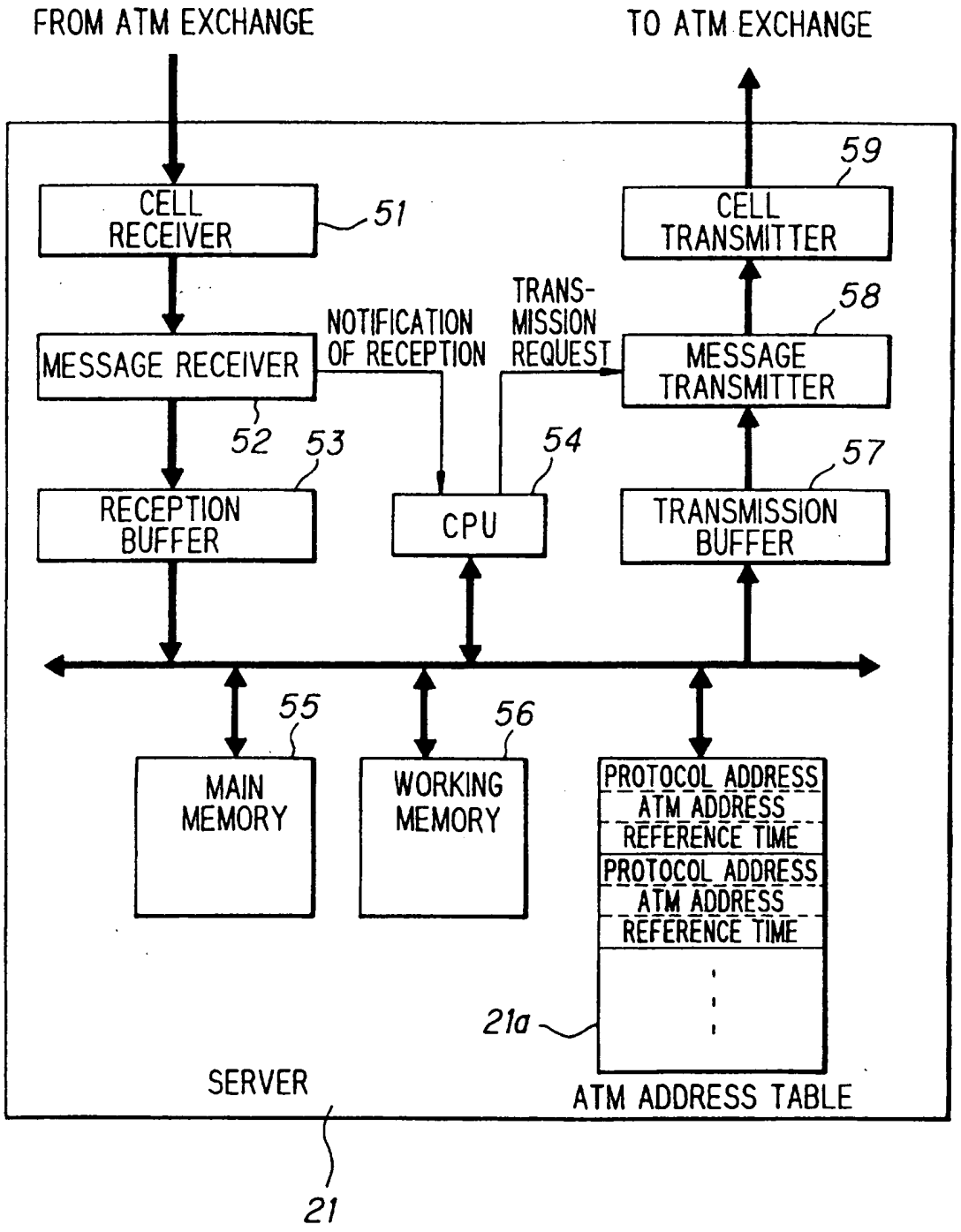
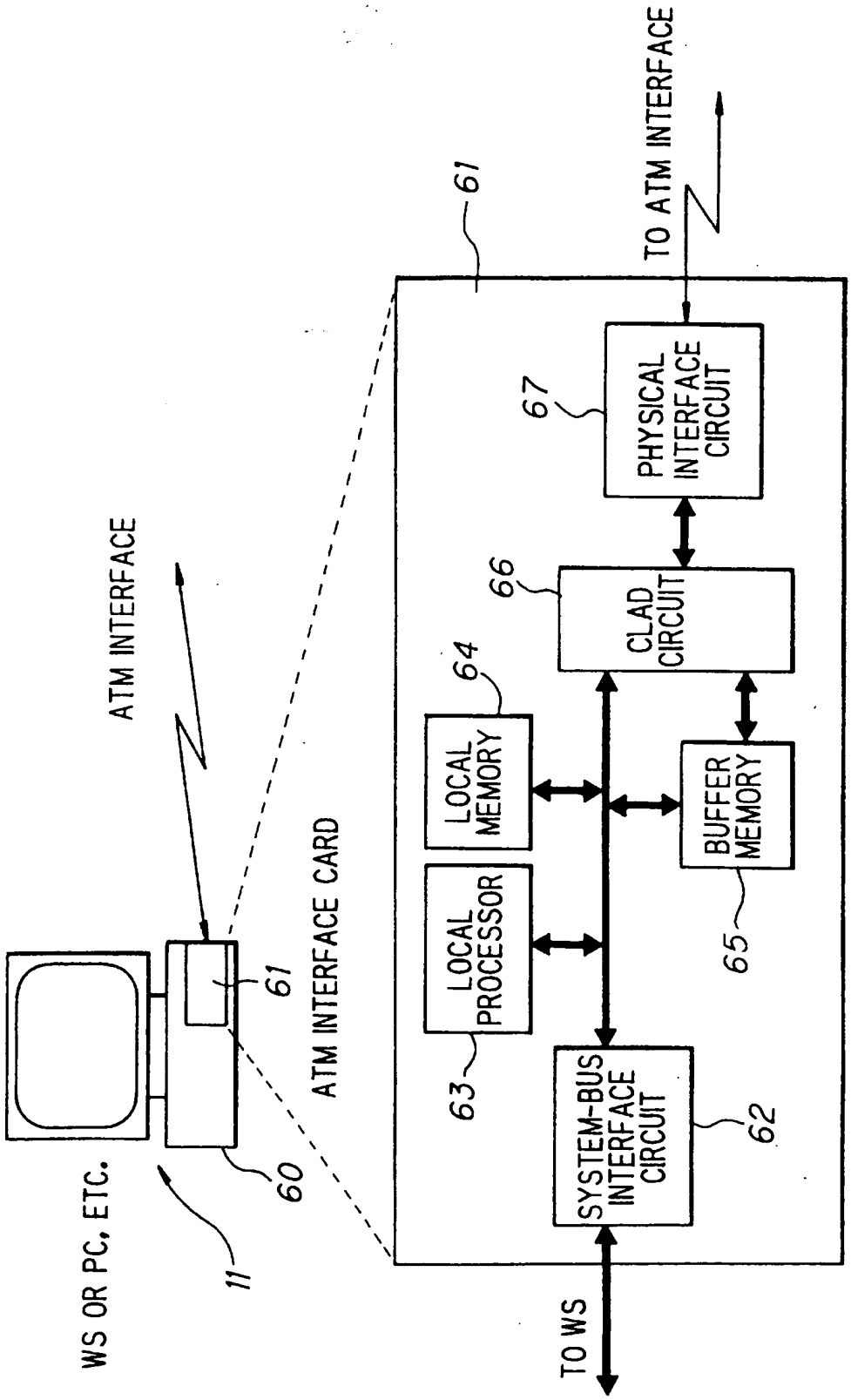

FROM ATM EXCHANGE
TO ATM EXCHANGE
CELL RECEIVER
51
CELL TRANSMITTER
59
MESSAGE RECEIVER
NOTIFICATION OF RECEPTION
TRANS-MISSION REQUEST
MESSAGE TRANSMITTER
58
52
53
54
57
RECEPTION BUFFER
CPU
TRANSMISSION BUFFER
55
56
MAIN MEMORY
WORKING MEMORY
PROTOCOL ADDRESS
ATM ADDRESS
REFERENCE TIME
PROTOCOL ADDRESS
ATM ADDRESS
REFERENCE TIME
21a
SERVER
ATM ADDRESS TABLE
21

FIG. 19


ATM INTERFACE
WS OR PC, ETC.
11
60
61
ATM INTERFACE CARD
61
TO ATM INTERFACE
67
PHYSICAL INTERFACE CIRCUIT
66
CLAD CIRCUIT
64
LOCAL MEMORY
BUFFER MEMORY
65
LOCAL PROCESSOR
63
SYSTEM-BUS INTERFACE CIRCUIT
62
TO WS

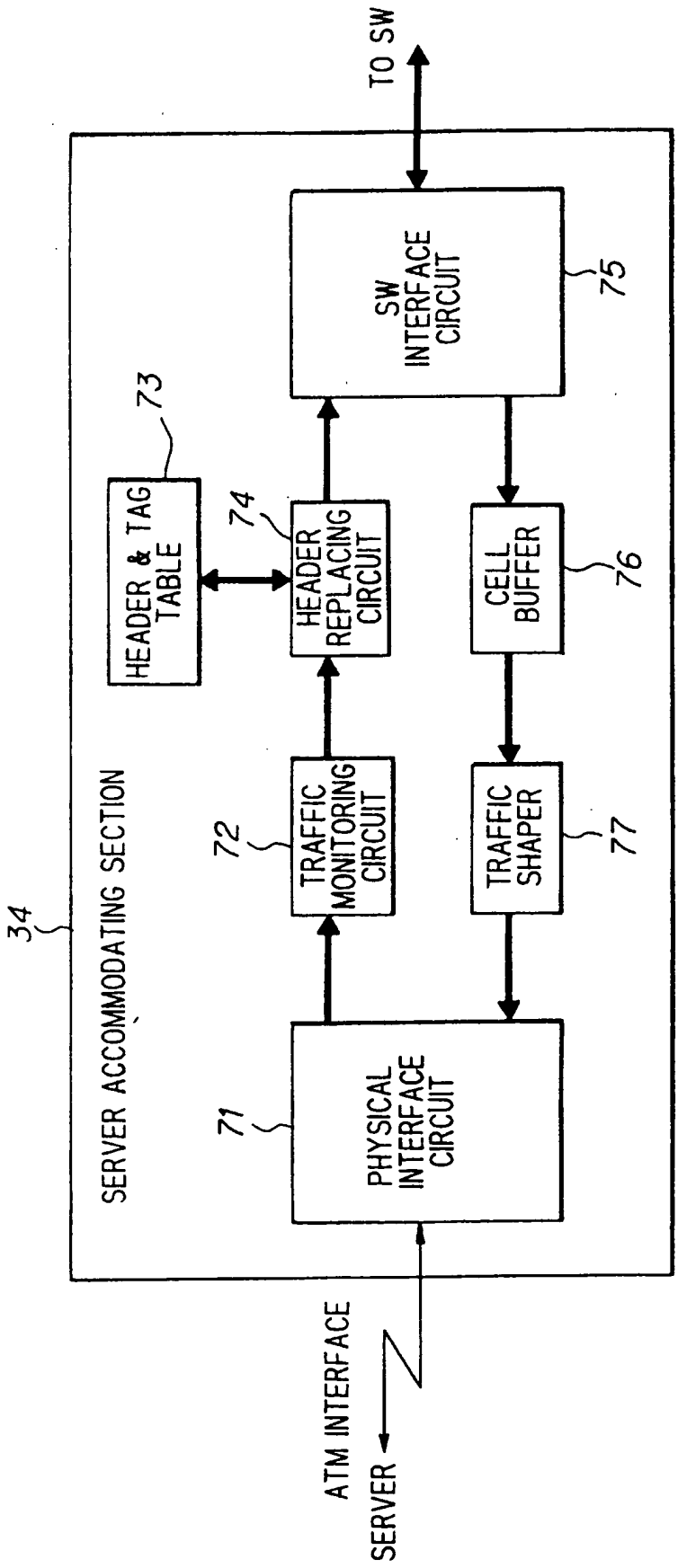

TO SW
SW INTERFACE CIRCUIT
75
HEADER & TAG TABLE
73
74
HEADER REPLACING CIRCUIT
CELL BUFFER
76
SERVER ACCOMMODATING SECTION
34
TRAFFIC MONITORING CIRCUIT
72
TRAFFIC SHAPER
77
71
PHYSICAL INTERFACE CIRCUIT
ATM INTERFACE
SERVER

FIG.20

FIG.21

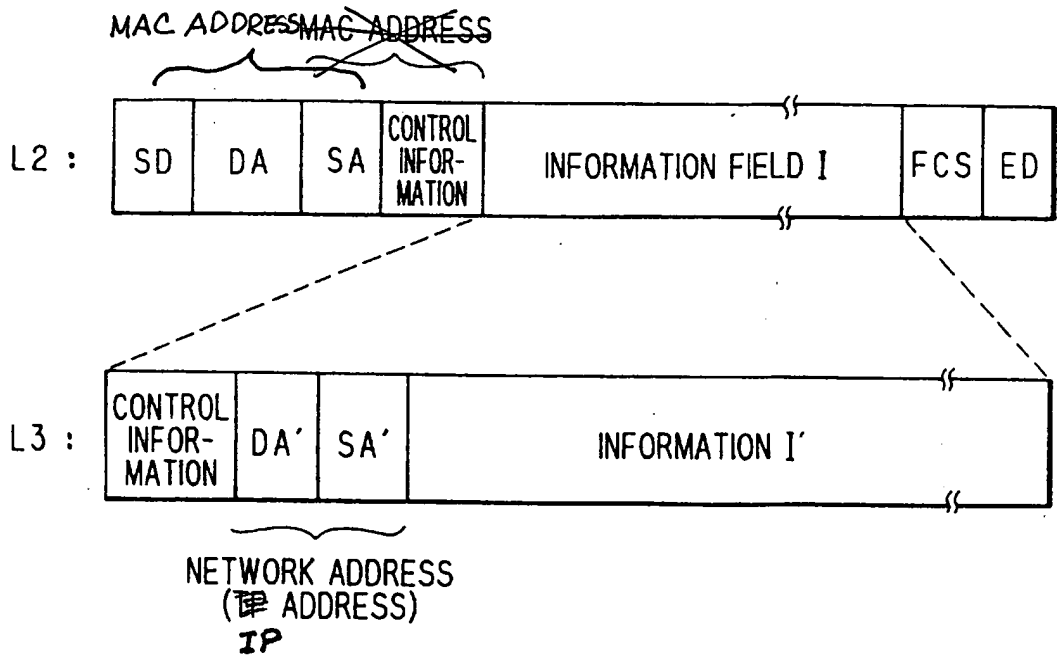

MAC ADDRESS
L2 :
SD
DA
SA
CONTROL INFOR-MATION
INFORMATION FIELD I
FCS
ED
L3 :
CONTROL INFOR-MATION
DA'
SA'
INFORMATION I'
NETWORK ADDRESS
(IP ADDRESS)
IP

FIG. 22 (PRIOR ART)

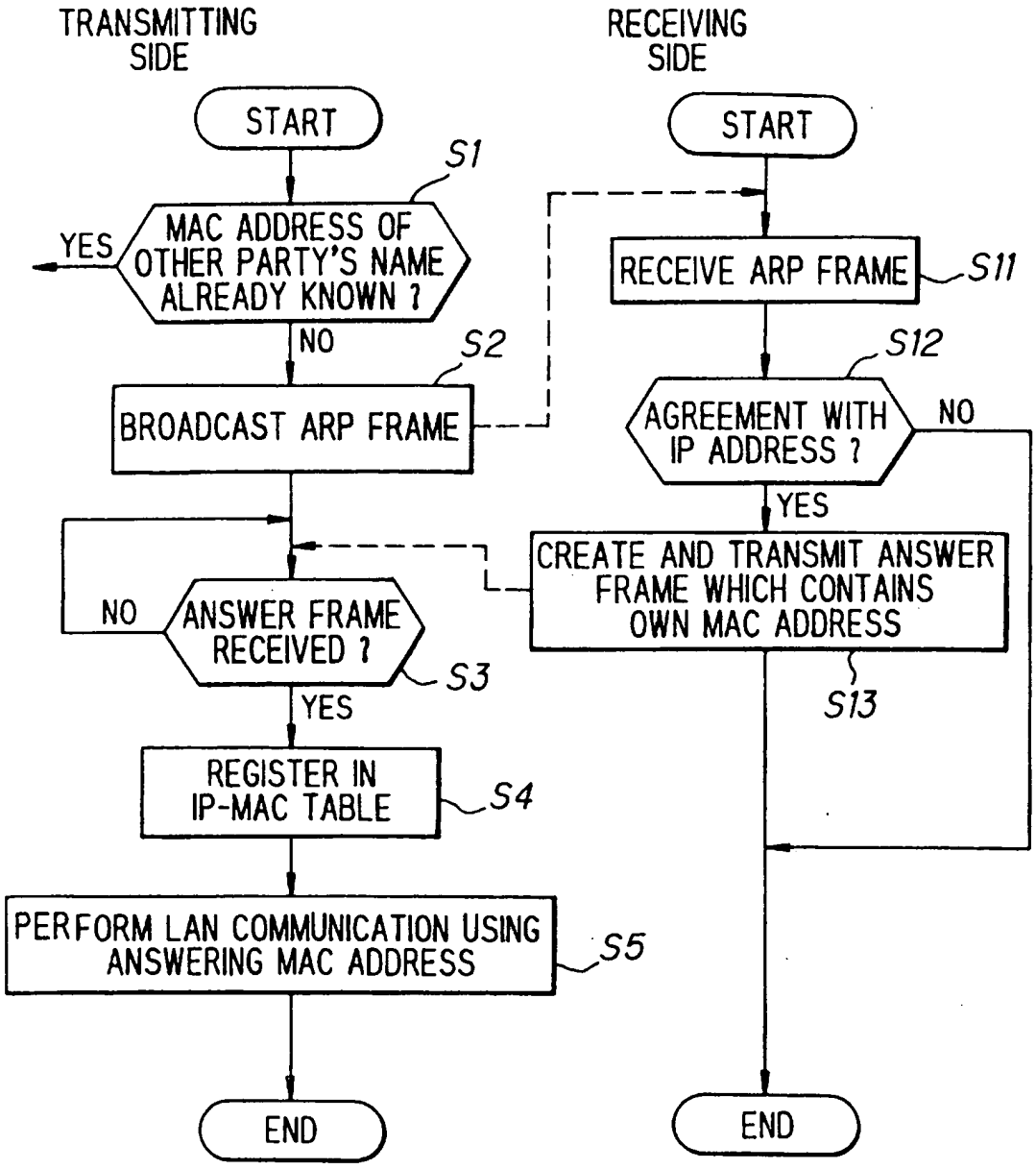


FIG. 23 ~~(PRIOR ART)~~

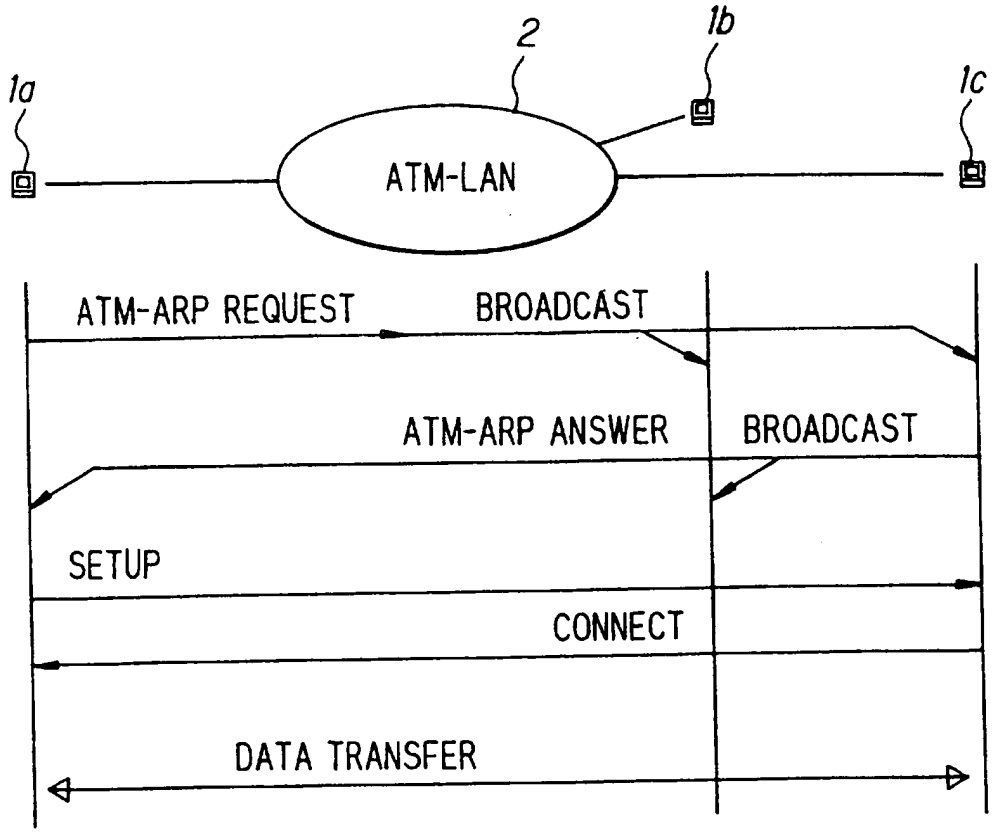
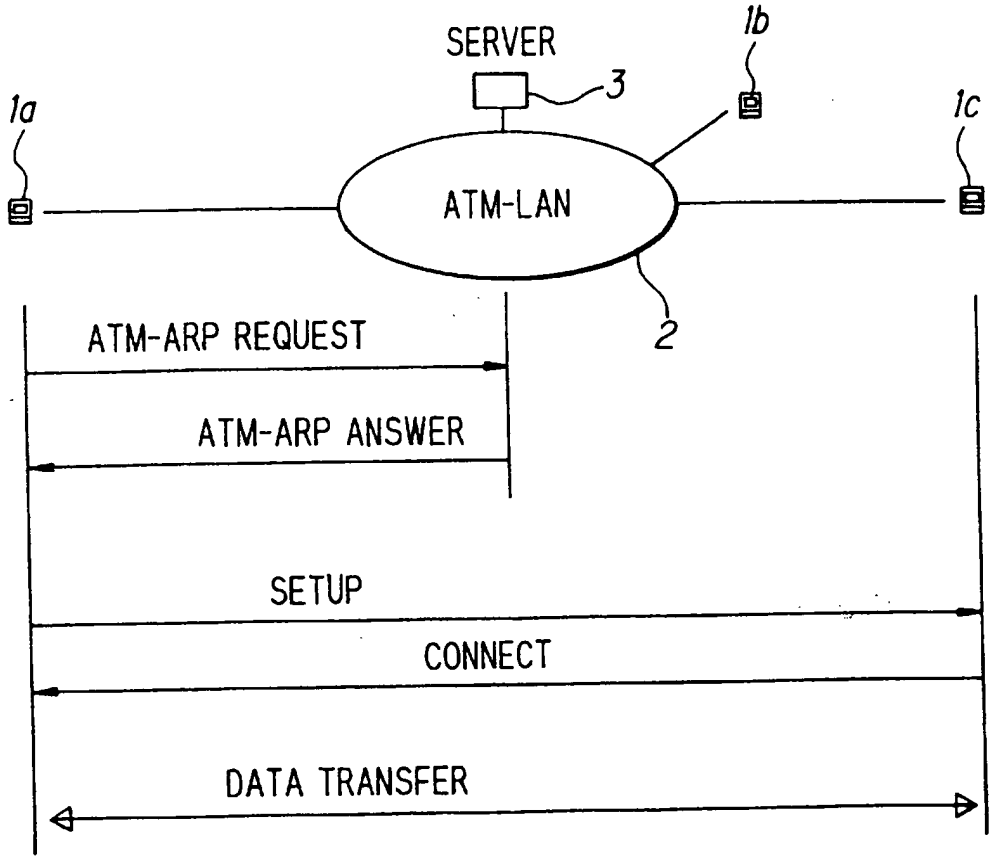



FIG. 24 (PRIOR ART)